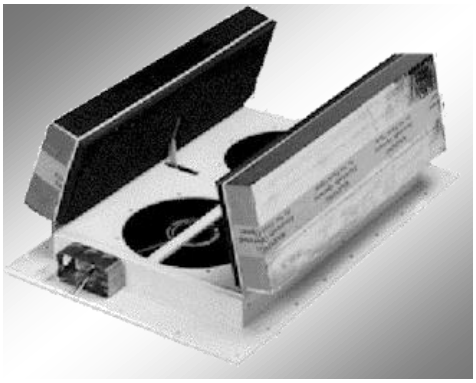
HV Series

Whole House Cooling Fans
Product Manual & Installation Guide

HVM.01

PLEASE LEAVE WITH HOMEOWNER

Serial Number _____ Date of Purchase _____Point of Purchase _____



HV1000

What the HV whole house cooling fans do

The HV is used to assist the natural cooling process in the house. When the outside temperature drops below the inside temperature, the cooler outside air can be used to cool the house. The HV will pull the cooler air from the outside, through the house, up into the attic and push the hot air outside. The HV is a fan product and will not cool the house below the outside air temperature or create a noticeable breeze. The HV can be used for as long as needed to cool the house to the desired level. It can also be used any time you want to change the air in the house.

The best location for your HV

Air will always take the path of least resistance. The HV should be located so that it is as central as possible to the area that you want to cool. Above a central hallway or at the top of a stairwell provide the best airflow. The fan can also be mounted vertically, exhausting through a knee wall into an under-the-eaves attic space. Cooler outside air should be able to move through the window, the space that needs to be cooled, and exhaust out through the fan into the attic.
Warning: Not to be used over cooking appliances.

Before installing your HV: Read all instructions carefully

► Some state and local electrical codes require fan products be installed by a licensed electrician. Check with your local code officials before installation.
► Make sure that you have adequate net free exhaust area out of your attic. A minimum of 2 square feet is required for the HV1000 and 3-1/2 square feet for the HV1600. This can be accomplished with a combination of roof, ridge, soffit or gable end vents or other attic exhaust points.
► Make sure that there is enough clearance for the doors to open. Minimum requirement for the HV with R22 insulating doors (HV1000 and HV1600-GR) is 11” and 12” for models with R38 insulating doors (HV1000-DB and HV1600-GDR).
► Make sure that there aren’t any pipes, wires, rafters, or air conditioning or heating ducts running through the space where the HV will be installed and that the doors will face an unoccupied area.

Unpacking your HV: When you have unpacked your HV carefully you will find the following:

HV1000 (silver faced insulation)
One (1) HV1000 Whole House Cooler
One (1) White Metal Grille w/(6) White Screws
One (1) Package of Foam Gasket
One (1) Metal Electrical Box Cover
One (1) Wall Switch (SPST)
Six (6) #8x3/4 Screws
One (1) Grounding Screw (green)

HV1600 (gold faced insulation)
One (1) HV1600 Whole House Cooler
One (1) White Metal Grille w/(6) White Screws
One (1) Package of Foam Gasket
Six (6) #8x3/4 Screws
One (1) Hand Held Remote Transmitter

DO NOT PULL ON, CARRY BY OR STRESS THE DOORS

Tip *Please note the serial number, date of purchase and the point of purchase on the top of this page for handy reference. The serial number is located on a label affixed to the HV next to the junction/utility box.*

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Installation

Tools and supplies needed

You will need two pieces of 2x stock to match your existing framing, a saw to cut the hole in the ceiling, a hammer or screw gun to attach the blocking to the existing joists and both a flat head and Phillips head screw driver to attach the grille and for the electrical work.

Figure 1

1. Cut a hole in the ceiling under where the HV will be installed. The dimensions of the hole should be no greater than **23 1/2" x 14"**. This will allow for the grille to cover the exposed sheetrock edges. Suggested methods for making the proper sized hole in the ceiling are; Cut a pilot hole under where the fan will be installed. Cut toward the edge to find the joist pattern and lay out the fan opening on the ceiling. (Figure 1) ; **or** mark the four corners of the opening from the attic side and draw a line between each of the four corners to lay out the fan opening; **or** use a stud finder to locate the joists, cut a template from the fan packaging material and use the template to lay out the fan opening.

Figure 2

2. The fan housing will fit either 16" or 24" on center framing. Cut two pieces of 2x stock (2 x 6 or 2 x 8 etc.) of the same dimension as the existing joists. Add these pieces of framing to form a box between the joists. (Figure 2).

3. Install the foam gasket (supplied) on the top of the joists and added framing. Check the joint between the ceiling and the 2x stock. Some types of ceilings are spaced away from the joists. Any gap between the 2x's and the ceiling should be sealed prior to final installation. (Figure 3) Use a low expansion spray foam sealant (not supplied).

Figure 3

4. Set the HV on the gasket with the doors facing to open into the attic. The lower housing will fit into the box with the mounting flanges overlapping the joists. (Figure 4) **The HV should not be forced into this opening.** Forcing it into place may cause the doors to bind and not function properly.

5. If desired, secure the HV to the top of the joists using the screws provided. When fastening the mounting flange to the joists care should be taken that all screws are tightened evenly to avoid the door hinges binding.

6. Wire the HV as shown in the Wiring section of this manual. It is recommended that the wiring of the HV be done by a licensed electrician.

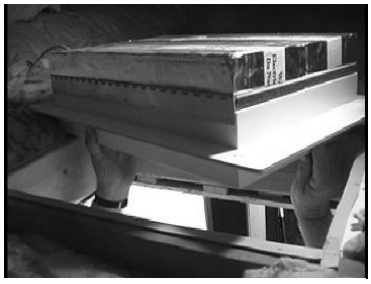


Figure 4

7. Check the HV for proper operation. Turn the unit on and allow 30 seconds for the doors to fully cycle open and the fans to start. **DO NOT FORCE THE DOORS OPEN.**

8. Install the grille (6 screws included) on the ceiling below the fan. (Figure 5)

Figure 5

Operating your HV

IMPORTANT

Be sure at least one window is open when the fan is operating

HV1000 - The HV1000 is operated by the wall switch installed per the wiring instructions.

HV1600 - The HV1600 is controlled by the hand held remote transmitter. Button 1 is used to turn the unit On/Off and button 2 for High/Low. Additional controls, when used, may override the remote control. See the Wiring section of this manual for further details.

Tip *Some owners find the installation has a more finished look when the inside of the blocking has been painted before the unit is installed and the grille is put in place.*

Wiring

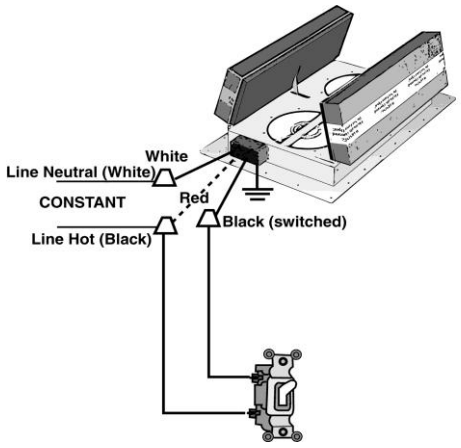
Important - Because of the motorized doors, wiring the HV is different than a normal ON/OFF fan. Please follow the instructions carefully. **Be sure to turn off power before wiring the HV Whole House Fan** It is recommended that the wiring of the HV be done by a licensed electrician.

The HV requires a constant source of power. Because the doors are motorized, they need power to open and power to close. The fan operation is controlled internally.

HV1000

There are three wires in the electrical box:
WHITE, RED, and BLACK.

- Connect the WHITE wire to Line Neutral
- Connect the RED wire to Line Hot
- Connect the BLACK wire to a Switched Hot Feed
  When 115 VAC Hot is applied to it, the doors will open. When 115 VAC Hot is removed, the doors will close.
- Connect the ground wire to the screw in the electrical box



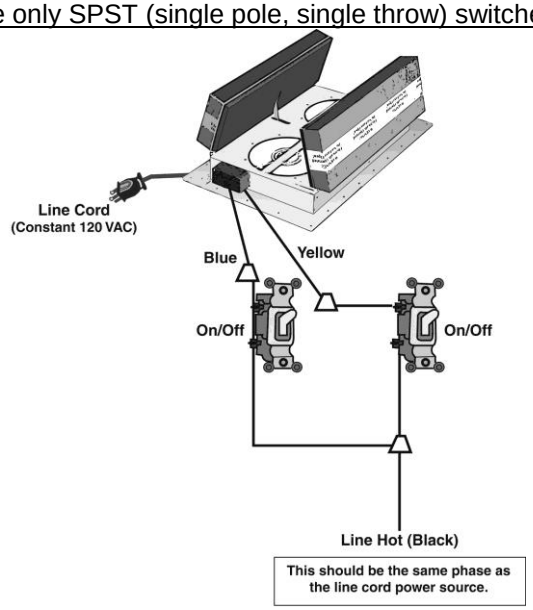
Drawing is not to scale

HV1600

The HV1600 is connected to power through the line cord and must be plugged into a constant, grounded power source. When connected to power, it will be fully functional with the hand held remote control unit. When any of the buttons on the remote control are pushed, the red indicator light should momentarily flash.

Hardwiring the unit to wall switches using the BLUE and YELLOW wires will provide additional, manual control. The BLUE wire will provide on/off control and the YELLOW wire will provide high or low speed control. Using a switch in the ON position will override the remote control function.

Use only SPST (single pole, single throw) switches.



Drawing is not to scale

The HV whole house cooling fans are not for use with solid state speed controls

Tip *A Remote Control Kit for the HV1000 is available and may be purchased separately. Installation is quick and easy and it may be installed at any time.*

Care

All the motors in the HV are permanently sealed and do not require oiling. To keep dirt, dust and debris from the fans we recommend that you periodically remove the grille from within the living space and dust the fan blades. Please remember to make sure that the fan is OFF before dusting the fan blades.

Specifications

Voltage …… 115VAC 60 Hz
Power
HV1000……..…..... 112 Watts
HV1600……..…..... 276 Watts

Airflow @ .03" (System)
HV1000 ……..…… 1000 CFM
HV1600 High……..……1600 CFM
HV1600 Low …… 900 CFM

R-Value
HV1000 & HV1600-GR R-22
HV1000-DB & HV1600-GDR R-38
Weight
HV1000……17 Lbs.
HV1600…… 21 Lbs.
Rough Opening…… 14 ½" x 22 ½"
Grille Dimensions…… 15 ¾" x 25 ¾"
Grille Color …….. White

Troubleshooting

HV1000: The most common problem with the HV1000 is caused by incorrect wiring. Before you check anything else make sure: WHITE wire in HV1000 is connected to 115 VAC Line Neutral; RED wire in HV1000 is connected to 115 VAC Line Hot (Constant Hot Feed); BLACK wire in HV1000 is connected to a switch that will make it hot when the switch is closed.

HV1600: If the wireless remote fails to activate the fan, the batteries may need replacing. The transmitter uses two type CR2016 3V coin cell batteries. Remove the back plate from the transmitter and remove the batteries. Following the markings above the battery holders, replace the batteries. Secure the back plate to the transmitter.

Switch	Doors	Fans	Possible Cause	Try
On	Do Not Open	Do Not Run	No Power	Check connections and circuit breakers
On (audible "click")	Do Not Open	Do Not Run	No constant power on RED	Check wiring connections. There must be constant power on the red wire.
Off	Do Not Close	Stop	RED and BLACK are connected together	Check wiring connections. Connections at the fan must be made individually.
On	Both Open	One Fan Runs	Something blocking fan rotation	Turn the power off and check for foreign matter blocking blade rotation.
On	Both Open- One closes then opens ...	One Fan Runs	Door motor gears or switch may have been stressed during installation. Framing opening may be too small.	Remove fan from between joists and test operation while fan is sitting on top of joists. If the fan operates, enlarge the opening and return the fan to installed position.
Off	Both Closed- One opens then closes…	Stop	Door motor gears or switch may have been stressed during installation. Framing opening may be too small.	Remove fan from between joists and test operation while fan is sitting on top of joists. If the fan operates, enlarge the opening and return the fan to installed position.

Tip *Our unique energy saving system, the R-Gardian, is designed for homes with blown in insulation and will protect your insulation when using an HV Whole House Cooler. The R-Gardian may be purchased separately.*

LIMITED WARRANTY

If, within the period of three years from the date of purchase, the HV 1000 or HV 1600 (the Product) is defective or malfunctions in normal home use, Tamarack Technologies, Inc. will repair or replace the Product at its discretion without charge for labor or materials. Customer is responsible for shipping charges. *NOTE: Some states codes require fans to be hardwired. Hardwiring of the HV1600 will not void warranty provided the wiring is performed by a licensed electrician.*

Conditions, Exclusions, and Limitations-This Warranty is subject to the following conditions, exclusions and limitations: **THIS WARRANTY DOES NOT COVER PROBLEMS RESULTING FROM INSTALLATION, OPERATION OR MAINTENANCE THAT HAS BEEN UNDERTAKEN OTHER THAN IN ACCORDANCE WITH THE INSTRUCTIONS. THIS WARRANTY DOES NOT COVER PROBLEMS RESULTING FROM DEFECTS IN OR CAUSED BY ASSOCIATED EQUIPMENT (FURNACES, SOLARIA, ETC.); FROM REPAIRS OR MODIFICATIONS ATTEMPTED BY PERSONS OTHER THAN TAMARACK TECHNOLOGIES, INC.; FROM ABUSE, ACCIDENTAL OR SHIPPING DAMAGE OR ACTS OF GOD. THIS WARRANTY DOES NOT APPLY TO THE PRODUCT USED OUTSIDE THE UNITED STATES, ITS TERRITORIAL POSSESSIONS, AND CANADA. EXCEPT AS SET FORTH ABOVE, NO EXPRESS OR IMPLIED WARRANTY IS GIVEN OR AUTHORIZED BY TAMARACK TECHNOLOGIES, INC. AND ALL OTHER SUCH WARRANTIES ARE EXPRESSLY DISCLAIMED. ANY WARRANTY OR MERCHANTABILITY OF FITNESS FOR ANY PARTICULAR PURPOSE SHALL BE LIMITED TO THE WARRANTY HEREUNDER. MOREOVER, ANY LIABILITY OF TAMARACK TECHNOLOGIES, INC. FOR THE PRODUCT SHALL BE LIMITED TO THE REPLACEMENT VALUE OF THE PRODUCT. IN NO EVENT SHALL TAMARACK TECHNOLOGIES, INC. BE LIABLE FOR ANY INCIDENTAL DAMAGES OR FOR ANY CONSEQUENTIAL PROPERTY OR COMMERCIAL DAMAGES, IRRESPECTIVE OF THE CAUSE THEREOF, OCCURRING EITHER DURING OR AFTER THE WARRANTY PERIOD, INCLUDING WITHOUT LIMITATION ANY DAMAGES TO ANY PART OF A BUILDING OR ITS CONTENTS.**

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